IN THE CLAIMS

1. (Original) A self-repair process for repairing an insulation material comprising:

a) applying a plurality of microcapsules to the insulation material, said plurality of microcapsules including a first reactant and a second reactant;

b) rupturing said plurality of microcapsules such that said first reactant and said second reactant react to form a replacement polymer.

2. (Original) The self-repair process of claim 1, whereby said first reactant or said second reactant is selected from the group comprising a monomer, a catalyst, a reactant of a condensation polymer, a fusible polymer and a chemical heater.

3. (Original) The self-repair process of claim 2, whereby said first reactant and said second reactant are a reactant of a condensation polymer.

4. (Original) The self-repair process of claim 3, whereby said first reactant is a dianhydride and said second reactant is a diamine.

5. (Original) The self-repair process of claim 2, whereby said first reactant is a fusible polymer and said second reactant is a chemical heater.

6. (Original) The self-repair process of claim 5, whereby said fusible polymer is a polyfluorocarbon.

7. (Original) The self-repair process of claim 1, whereby said first reactant and said second reactant are disposed within a single microcapsule.

8. (Original) The self-repair process of claim 7, whereby said first reactant and said second reactant are separated by a polymer shell.

9. (Original) The self-repairing process of claim 8, whereby said single microcapsule comprises a reactant core including said first reactant and a reactant shell including said second reactant, said reactant shell surrounding said reactant core.

10. (Original) The self-repairing process of claim 1, whereby each of said plurality of microcapsules has a size of 5-500 μm.

11. (Original) The self-repairing process of claim 1, whereby said replacement polymer is formed in a break in said insulation material.

12. (Withdrawn) A self-healing system comprising, a repair material including a plurality of microcapsules, said plurality of microcapsules including a first reactant and a second reactant that react to form a replacement polymer upon rupturing of said plurality of microcapsules.

13. (Withdrawn) The self-healing system of claim 12, whereby said repair material is an insulation material.

14. (Withdrawn) The self-healing system of claim 12, whereby said repair material is a strip of material.

15. (Withdrawn) The self-healing system of claim 14, whereby said strip of material is a plastic strip.

16. (Withdrawn) The self-healing system of claim 12, whereby said first reactant and said second reactant are disposed within a single microcapsule.

17. (Withdrawn) The self-healing system of claim 16, whereby said first reactant and said second reactant are separated by a polymer shell.

18. (Withdrawn) The self-healing system of claim 17, whereby said single microcapsule comprises a reactant core including said first reactant and a reactant shell including said second reactant, said reactant shell surrounding said reactant core.

19. (Withdrawn) The self-healing system of claim 12, whereby said first reactant is a dianhydride and said second reactant is a diamine.

20. (Withdrawn) The self-healing system of claim 12, whereby said first reactant is a polyfluorocarbon and said second reactant is a chemical heater.

21. (Withdrawn) The self-healing system of claim 12, whereby said first reactant or said second reactant is selected from the groups comprising a monomer, a catalyst, a reactant of a condensation polymer, a fusible polymer and a chemical heater.